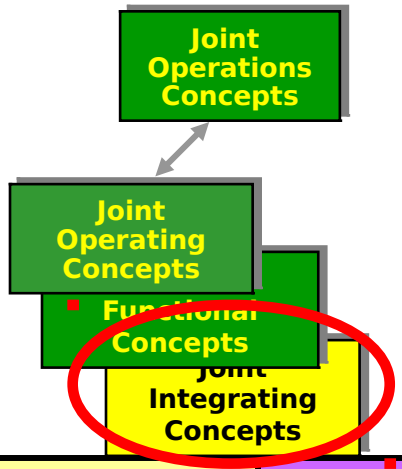
Joint Staff Perspective

AUSA Annual Space and Missile Defense Symposium
El Paso, Texas
8 December 2004

RADM M.G. Mathis, USN
J-8/DDFP

JCIDS Capabilities Based Methodology

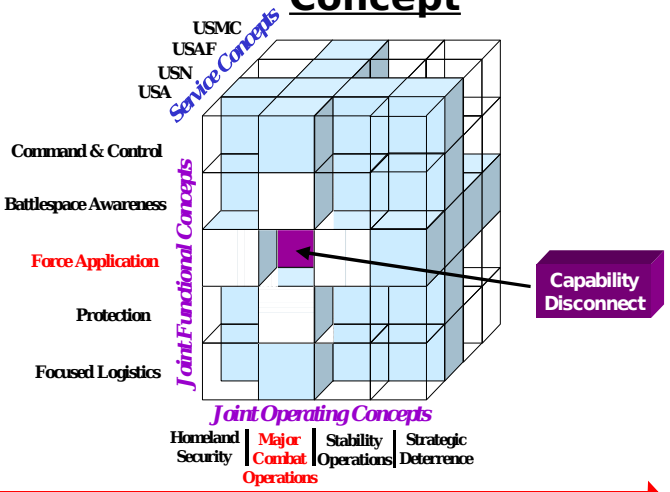
Concepts



Potential Capability Improvement Areas

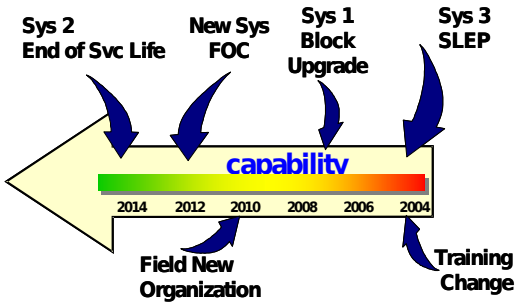
- Integrated Priority List
- Joint Quarterly Readiness Review
- Lessons Learned
- Analysis
- Service Programs
- Strategic Planning Guidance
- Range of Military Operations
- Joint Experimentation
- ACTDs

Joint Integrating Concept

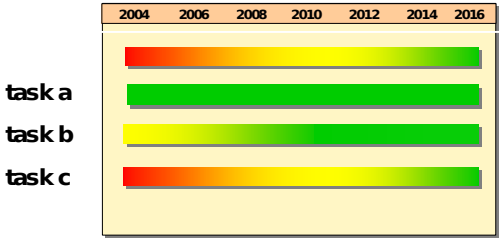


SecDef | **Joint Chiefs of Staff** | **Joint Requirements Oversight Coun**

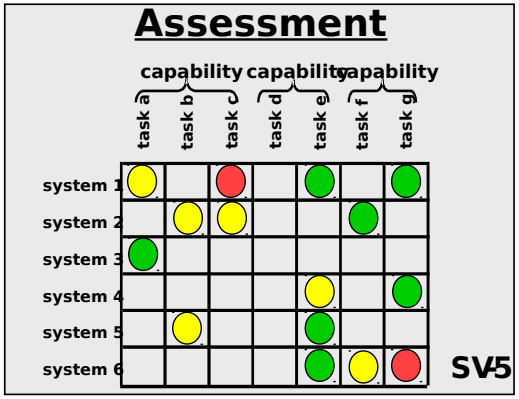
Resource Strategy



Capability Roadmap

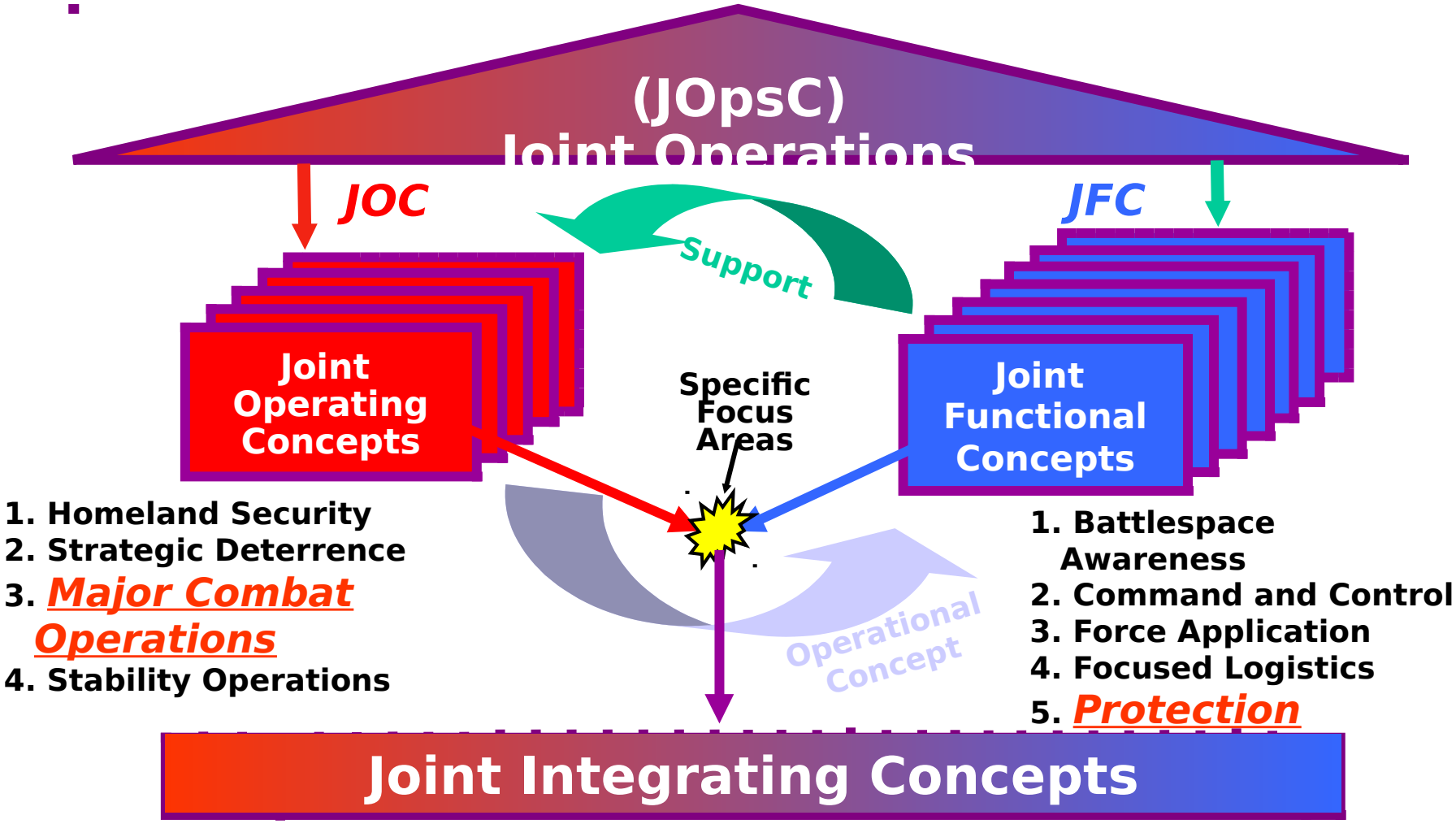


Capability Assessment



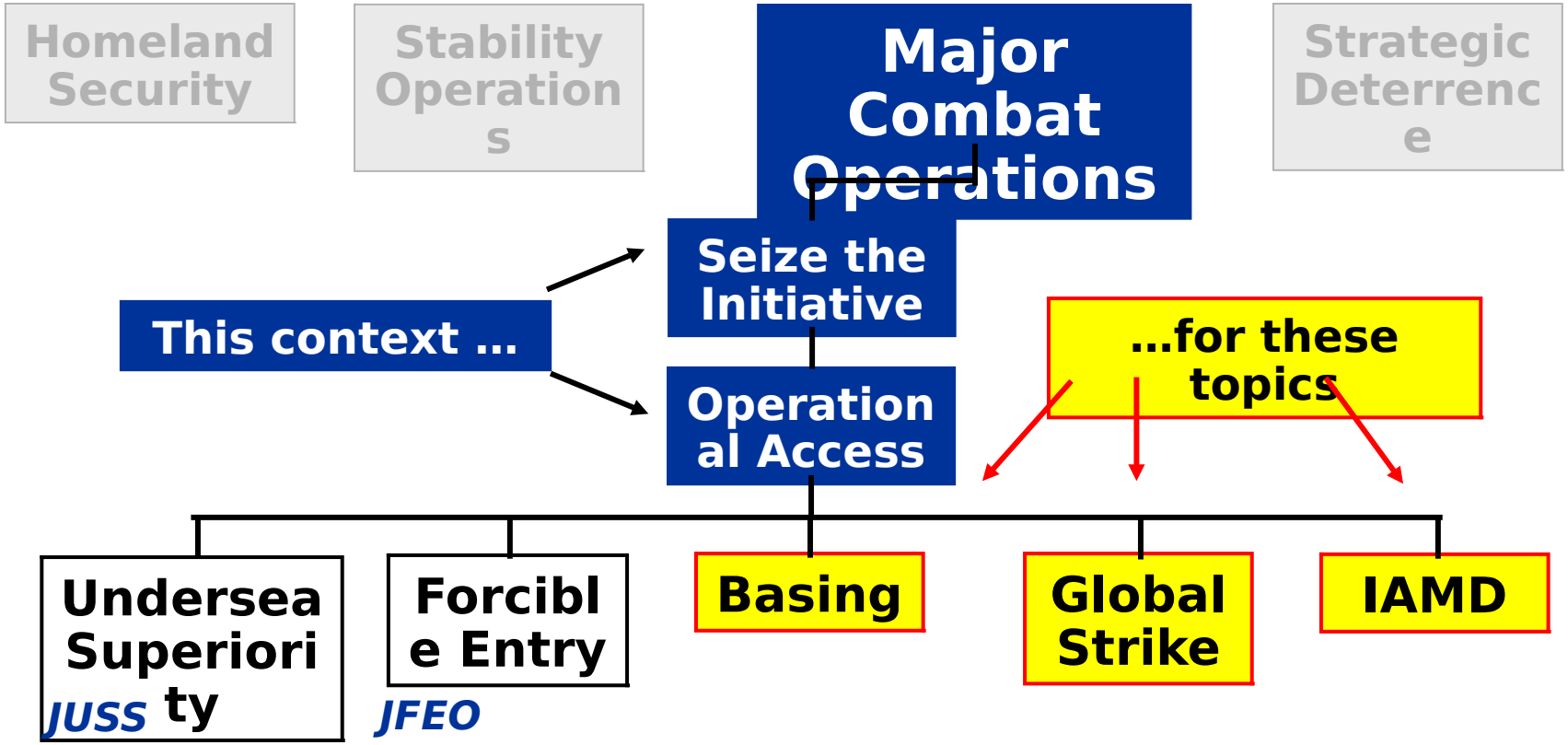
Secretary of Defense | **Joint Staff and OSD** | **nt Requirements Oversight Counc**

Joint Concepts



Bounding the Problem

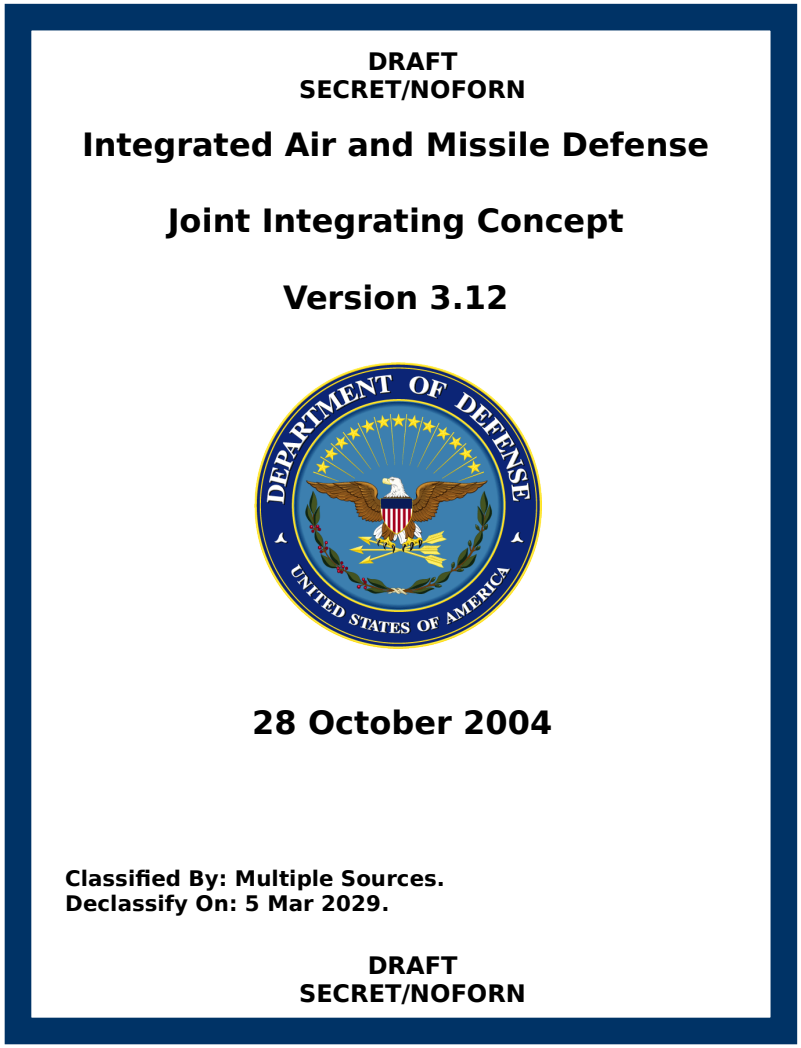
(JCS Tank Guidance, 14 June 04)



Joint Integrating Concept - Definition

- A Joint Integrating Concept (JIC) is a description of how a joint force commander 5-20 years in the future will integrate capabilities to generate effects and achieve an objective
- A JIC includes an illustrative CONOPS for a specific scenario and a set of distinguishing principles applicable to a range of Defense Planning Scenarios
- JICs have the narrowest focus of all concepts and distill JOC and JFC derived capabilities into the fundamental tasks, conditions and standards required to conduct a Capabilities Based Assessment (CBA)

IAMD Joint Integrating Concept



- Describes how JFC will integrate joint capability to counter air and missile threats during a MCO in the 2015 time frame
- Addresses 6 major mission areas
  - Common Battlespace Awareness and Understanding
  - C2 and Battle Management
  - Offensive Counterair Attack Operations
  - Active Air Defense
  - Passive defense
  - Joint Logistics
- Status: approved at J-7 hosted GO / FO conference, 14 Oct 04…JCB 1 Nov 04, JROC/JCS Super Tank by Dec 04

Baseline Document for the Capabilities Based Assessment (CBA)

IAMD JIC - Scope

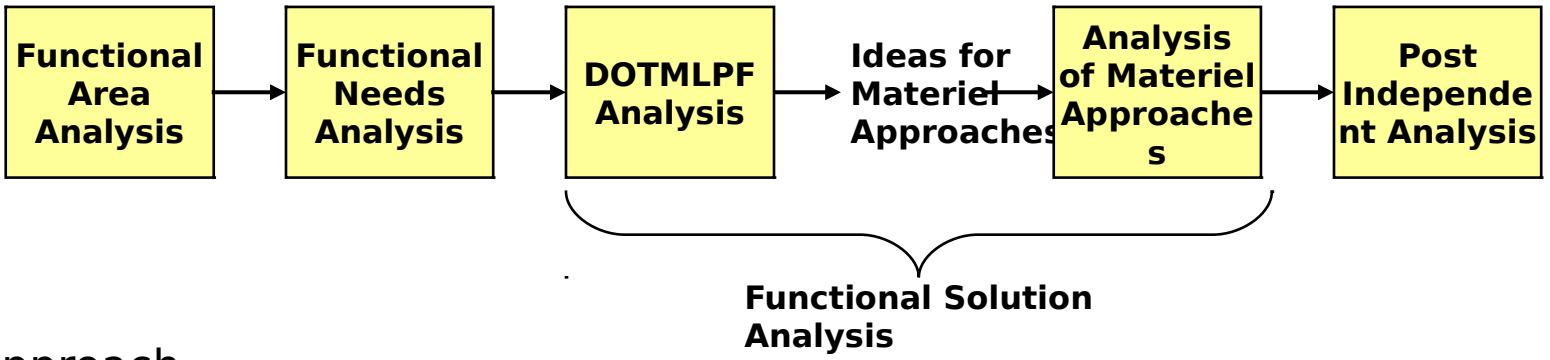
- **IAMD is the integration of capabilities and overlapping operations to defend the Homeland and US national interests, protect the joint force and enable freedom of action by negating an adversary's ability to achieve adverse effects from their air and missile capabilities**
- **Threat set**
  - **Space-based and ballistic missile reentry vehicles**
  - **Ballistic missiles**
  - **Cruise missiles**
  - **Aircraft (fixed/rotary-wing, UAVs, balloons, airships, etc)**
  - **Indirect fire rockets, artillery and mortars**
  - **C2 nodes, battle management processes and organizations**
  - **Launch sites, airfields, delivery platforms and targeting sensors**
  - **Munitions, supplies and infrastructure**

IAMD JIC - Attributes

- **Follows Joint Operations Concept**
  - Fully integrated
  - Expeditionary
  - Networked
  - Decentralized
  - Adaptable
  - Decision Superiority
  - Lethality

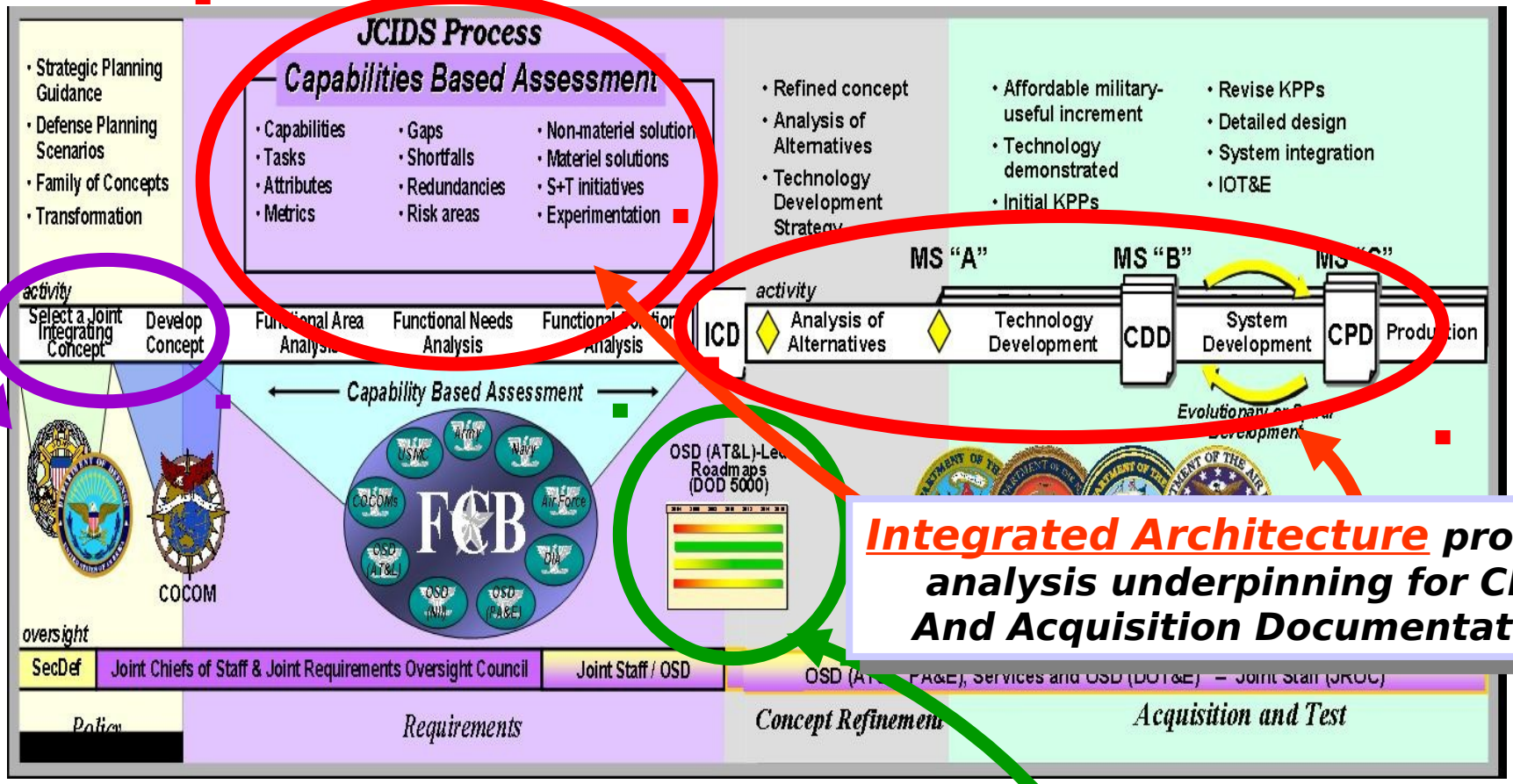
Basis for CBA Metrics

IAMD CBA Process



- Approach
  - A Joint effort conducted under the auspices of the Force Protection (FP) Functional Capabilities Board (FCB)
  - Flag Officer/General Officer BOD, CoCaC and AMD Working Group
  - Army providing lead based on experience with ongoing AMD studies
  - Utilize organic service analytical organizations
- COAs identified include
  - Integrated DOTMLPF changes
  - Product improvements to existing material solutions
  - Adaptations of foreign material solutions
  - Initiation of new material solutions
- Post – independent analysis is the final step in FSA

DOD End-to-End Capabilities and Acquisition Process



Integrated Architecture provides analysis underpinning for CBA And Acquisition Documentation

JIC begins the Capabilities and Acquisition Process

Mission Roadmap presents Results of Capabilities and Acquisition Process

Capability Area Review

USD (AT&L), as DAE, will lead reviews of select capability areas to:

- Provide mission area context – from a top down perspective
- Implement capability-based methodology on provider side
- Link policy, capability generation, acquisition and budget processes
- Identify joint solutions and added work to be done (across DOTMLPF)
- Reveal need for management, engineering and testing across a capability area

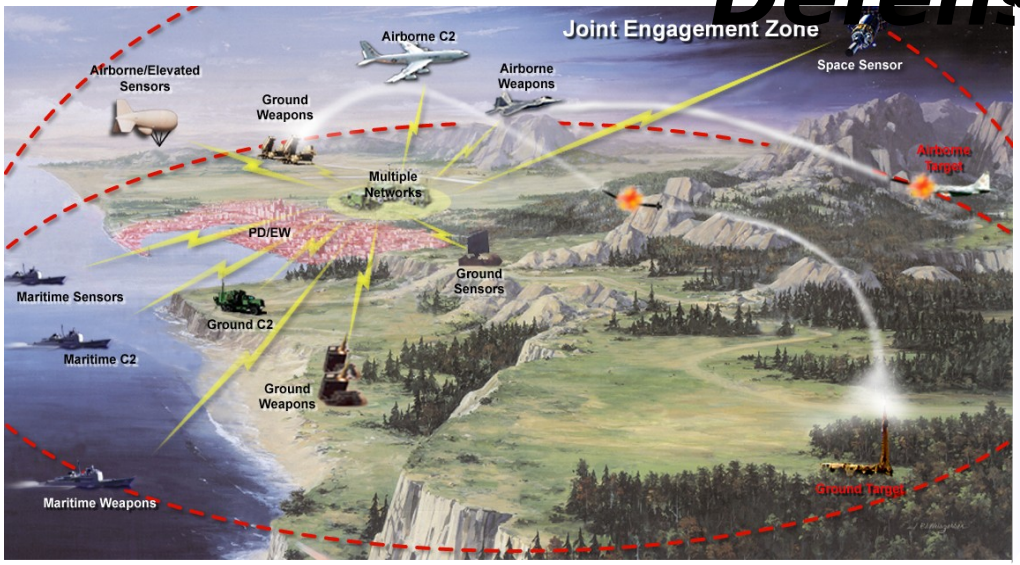
Assess the cumulative effect of individual program decisions

Roadmap and Roadmapping

Roadmaps provide a framework for decision-making – prompt discussion, inform decisions and capture decisions made

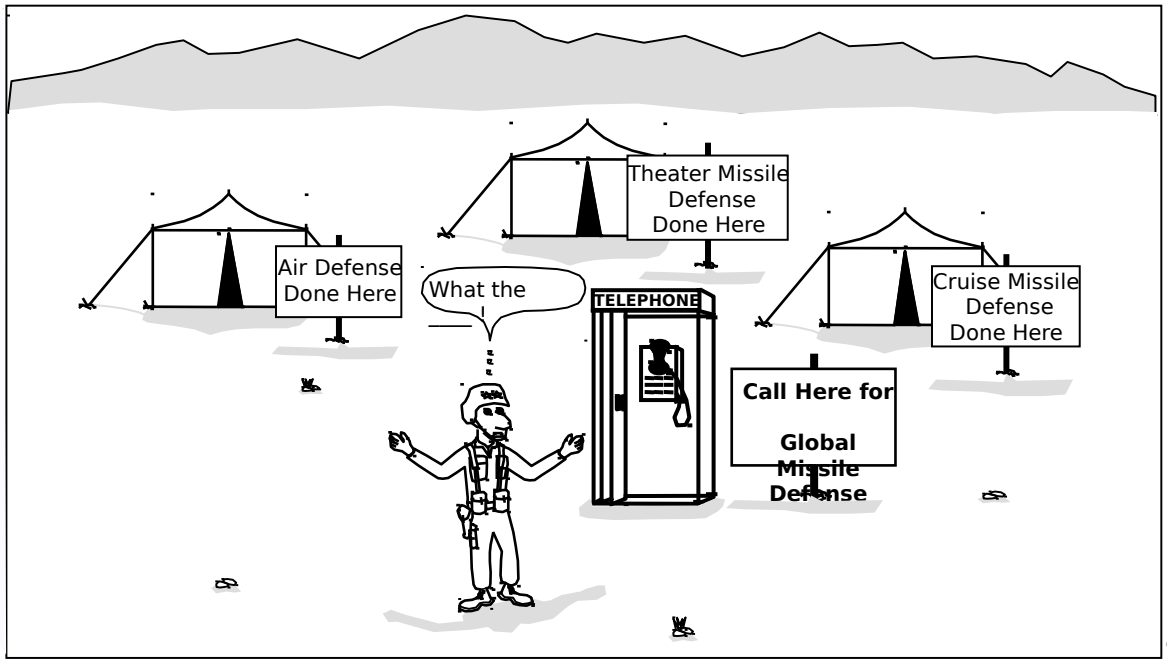
- Lay out Department's strategic plan considering:
  - **Material and non-material solutions**
  - **Capability that only exists at Family/System-of-Systems level**
  - **What to expect from each system**
  - **Cross-cutting management, engineering and testing**
  - **Network enablers**
  - **Affordability**
- Start with the "as is" and manage the evolution of the vision

Integrated Air and Missile Defense

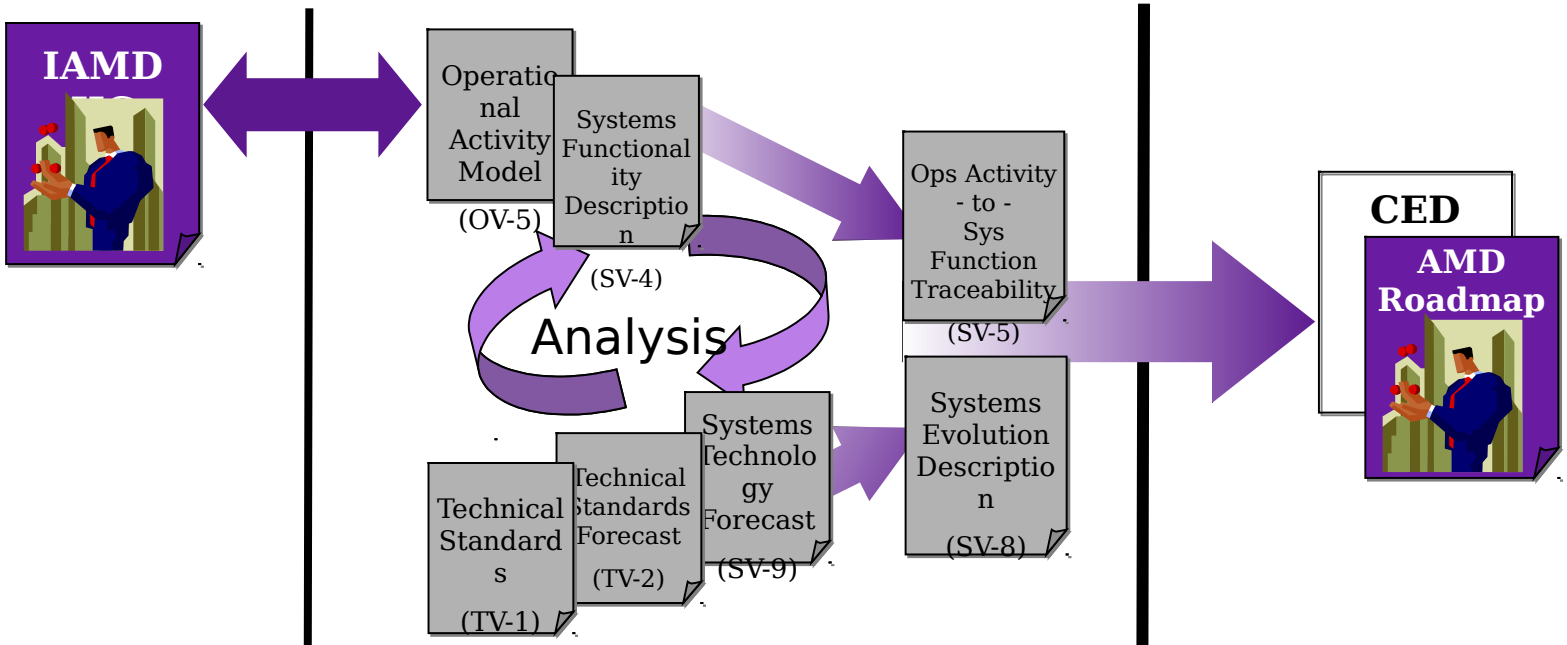


We want this

Not this



Integrated Architecture links to JIC and Roadmap



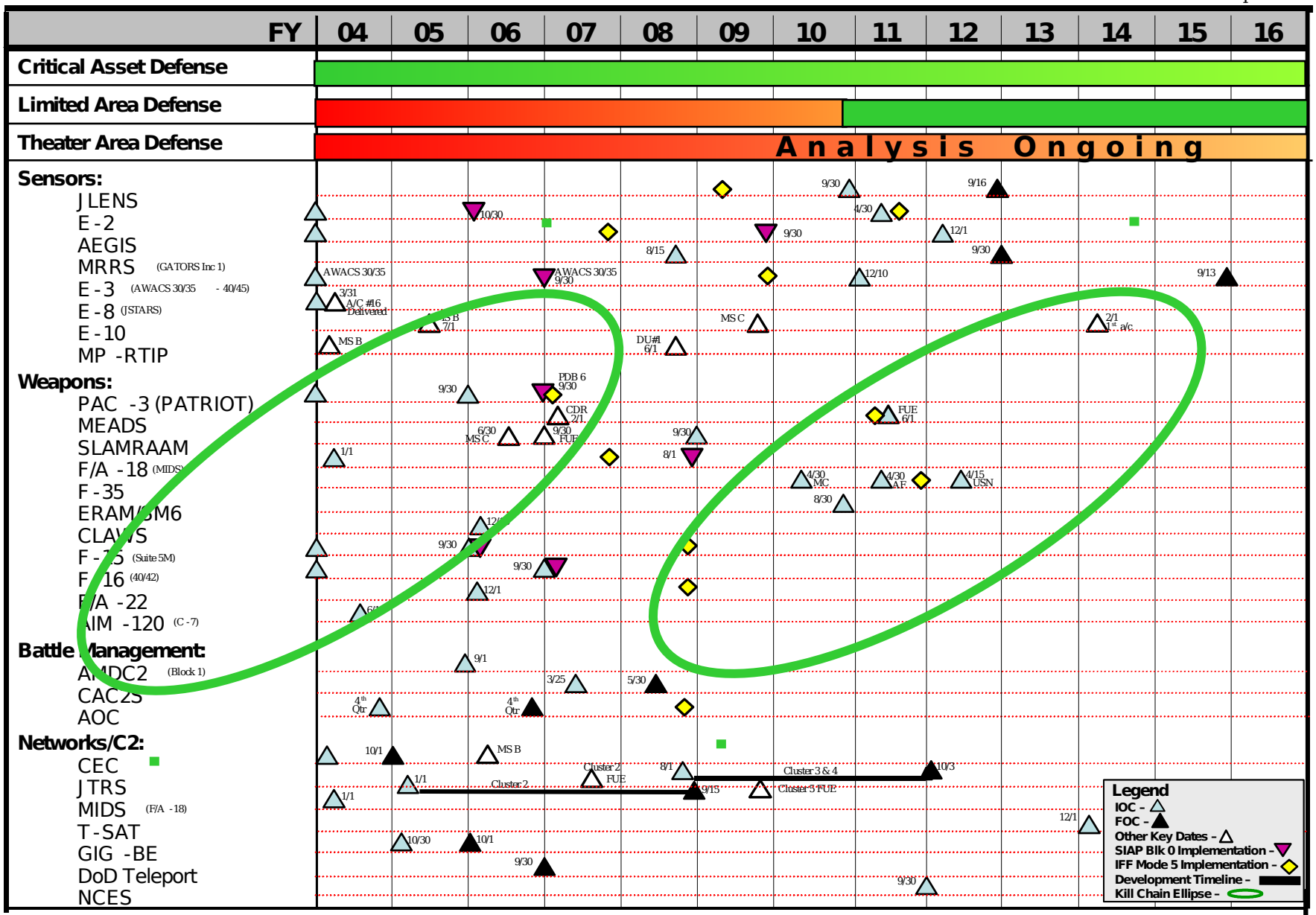
- **Operational activities in architecture describe operational capabilities in the JIC**
- **These capabilties are essential element of the Functional Area Analysis (FAA)**

- **The Architecture provides a means for operators to communicate needs to acquisition community**
- **Architecture identifies functional and interoperability gaps as related to achieving specific mission thread**
- **Analysis essential to Functional Needs Assessment (FNA)**
- **Supports development of Functional Solutions Assessment**

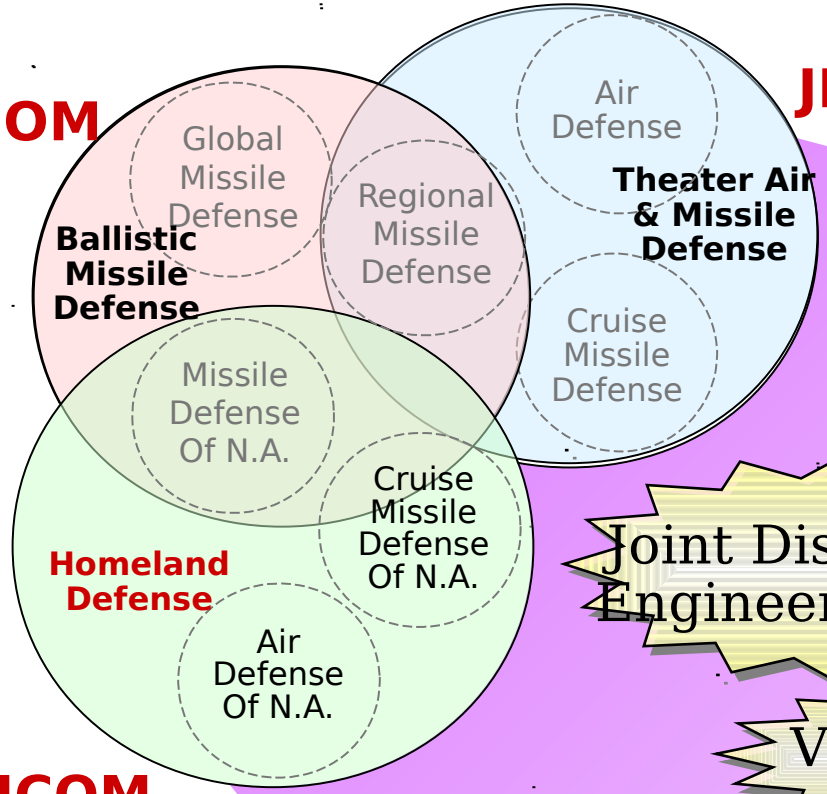
- **Selected architecture products support Roadmap**
- **Describes Capability Evolution over time**
- **Identifies operational gaps and overlaps**
- **Supports FoS level approach to acquisition decisions**

AMD Roadmap: Capability Development

As of 1 Apr 04



Evolving Air and Missile Defense



- Joint Distributed Engineering Plant
- Cruise Missile Defense
- Virtual Warfare Center
- Combat Identification
- Homeland Air Security
- NCR Demo

JTAMDO Advocates & Integrates Air and Missile Defense to support all Combatant Commanders

Backups

FNA Defined

- Qualitative assessment of required capabilities using the tasks, conditions, and standards identified in the FAA
  - Examines the ability of current and programmed force to accomplish each task under the conditions and to the standard specified by the concept
  - Determines gaps in capability by which tasks cannot be performed, performed to standard or in all conditions, or performed in the manner required by the concept
- Determines which capability gaps pose sufficient operational risk to constitute a capability *need* that requires a solution
- Groups capability gaps by high, medium, and low risk. High risk capability gaps proceed to the FSA

FNA Methodology

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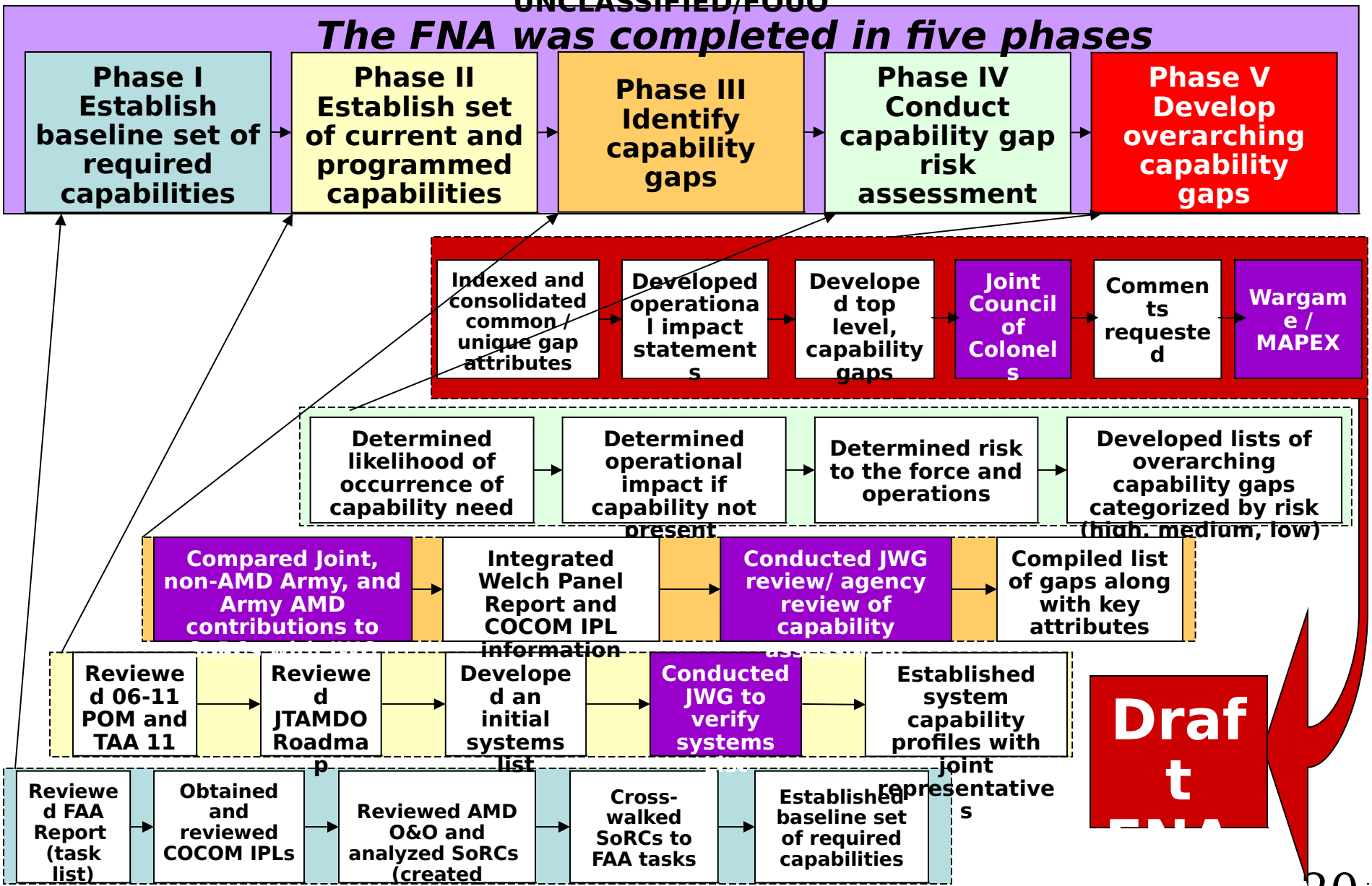
The FNA was completed in five phases
Phase I Establish baseline set of required capabilities
Phase II Establish set of current and programmed capabilities
Phase III Identify capability gaps
Phase IV Conduct capability gap risk assessment
Phase V Develop overarching capability gaps
Indexed and consolidated common / unique gap attributes
Developed operational impact statements
Developed top level, capability gaps
Joint Council of Colonels
Comments requested
Wargame / MAPEX
Determined likelihood of occurrence of capability need
Determined operational impact if capability not present
Determined risk to the force and operations
Developed lists of overarching capability gaps categorized by risk (high, medium, low)
Compared Joint, non-AMD Army, and Army AMD contributions to
Integrated Welch Panel Report and COCOM IPL information
Conducted JWG review/ agency review of capability
Compiled list of gaps along with key attributes
Reviewed 06-11 POM and TAA 11
Reviewed JTAMDO Roadmap
Developed an initial systems list
Conducted JWG to verify systems
Established system capability profiles with joint representatives
Reviewed FAA Report (task list)
Obtained and reviewed COCOM IPLs
Reviewed AMD O&O and analyzed SoRCs (created profiles)
Cross-walked SoRCs to FAA tasks
Established baseline set of required capabilities
Draft

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Selected Steps in Methodology (1 of 3)

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FAA

UJTL Tasks
AUTL Tasks
O&O Mission Sets

AMD Tasks

Comprehensive Crosswalk ⇨ Validated Required Capabilities

Crosswalk Tasks To SoRCs

SN 3.4.3 Coordinate Strategic Ball… c Missile Defense
Supporting SoRCs

Number	Title
14	Interoperability.
15	Command Po…
16	Collaborat…
20	Compa… …Net-Centric Architectures.
21	LOS , …ications Forward and Backward Compatib…
22	Robus… …ications.
31	Operat… …in a Net-Centric Architecture.
35	Common BC, Force Mix and Force Size for TF Modularity.
61	Multifunctional CPs.

One example

Each Statement of Required Capability (SoRC) Evaluated

Determine Joint Contributions

SoRC	Joint Contribution	Systems	Qty	Can't Do
5-3.4.1.1 **Interoperability. AMD** BC systems must be fully compati… interoper… inter… …ces.	The sister services have battle command com… integration with Army Battle Comman… …e areas, such as, common data links … radios with compatible wave… …ust primarily to support A… …g. Joint capabilities inclu… …er-in-the-air joint comm… …er joint networks defin… …abilities include …ons and common terminology …e tools, such as an ATO, to specify …s. The services also contribute to the Single …ucture and will implement IABM by providing air pi… …ed into the network for processing at the respective service nodes. Joint systems provide a C4I architecture linking the JFACC to participating JTAMD C4 nodes.	JTRS JTIDS/MIDS/JRE CAC2S CEC/CTN JSS N… …CA BCS (AF) AMDWS ADSI TBMCS (JDP) IFF	N N N N N N N N	AMD systems not fully compatible or integrated. Not all systems can exchange data in the same formats. For example … CEC is not compat… with JTIDS. D… compatibil… …of extend… …platforms. For… …USMC CP …form BM …unch is for a SLAMRAAM launcher.

SoRC Joint Contribution System Qty Can't Do

Determine Non-AMD Army Contributions

SoRC	Army Non-AMD Contribution	Systems	Qty	Can't Do
5-3.4.1.1 **Interoperability AMD** BC s… must be … …cable and …egrated with the Army and JIM forces.	The BOSs with potential contribution… …and AVN in an attack operations m… …MD, there is limited capabili… …auity. CAFADS also has … …. The BOSs gener… …capabilities tailore… …exchange FO data is …as well as tactical radios.	TAIS AFATDS GCCS SINC…		Targeting data exchange is not possible to support real-time engagements. Interoperability is li… and compatibili… …tegration … …ist …oss th… …s.

SoRC Army Non-AMD Contribution System Qty Can't Do

Determine Army AMD Contributions (FY13)

SoRC	Army AMD Contribution	Systems	Qty	Can't Do
5-3.4.1.1 **Interoperability. AMD** BC systems must be fully compatible, interoper… inter… …e …JIM	Across Army AMD there is battle command … …d integration with Army Battle Comman… degree. These C4I capabilities e… targeting and TAMD planni… implementing meet-in… distribution over … …s. The capabiliti… …ucs …d the ability to use …attle Management Aids …contribute to the Single …ill implement IABM by providing …e network for processing at the respective	JTRS JTIDS/MIDS/JRE GCCS Patriot JLENS AMD…	N N N N	Not fully compatible or integrated. Not all systems can exchange data in the same formats. For example, the FAAD Data Link is not compatible with … Data link com… …es not e… …es all …platfor… …ample, a F… …de cannot p… …IBM functions for a PAC-3 launcher.

SoRC Army AMD Contribution System Qty Can't Do

WGs/CoC/MAPEX
- ***June - Ft Bliss***
- ***July – DC Area***
- ***Aug – DC Area***
- ***Sep – DC Area***
- ***Oct – Ft Bliss***

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Selected Steps in Methodology (2 of 3)

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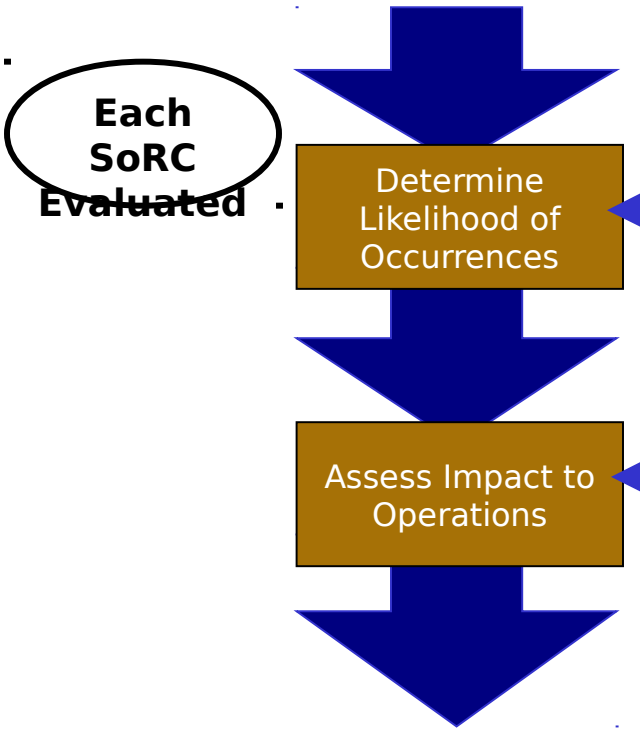

Capability Gap 14	Key Characteristics	Capability Gap Assessment		Risk Quotient
		Likelihood	act	
AMD BC syst… interopera ble and integr… with the Army an… JIM forces.	…ncomplete GIG …plementation in …nt and Army AMD Systems. • Limited a… of co… …cing use …ways" at …tion-specific points. • No "meet-in-the-air" data links / communications architectures compatibility across Army BOSs, agencies, and multinational partners. • Diverse battle command H/W and S/W architectures, modules, and processes that inhibit interoperability across all Services, BOSs, Government agencies, and multinational forces.	Likelihood: High Ration… Norma… employm… …s in a JIM environ…	…nificant …e: There is an …eased potential for fratricide and a strong potential for de-synchronizati… operation… …to fully … …ss … …y in … …nd ex… …n of a Single Int…ated Air Picture (SIAP) and establishment and maintenance of unambiguous combat identification, severely inhibits effective employment of AMD and may result in significant gaps in AMD coverage of the force. Inability to synchronize AMD operations with the land combat scheme of …	Risk: High Rationale: Inefficiencies, delays, and restricted releases in informati… sharin… le… …ble …es in AMD protection. These circumstances could result in high casualties, loss of critical resources, and de-synchronizatio n of combat operations, especially when an … …ary … …s ….

Capability Gap 14

Capability Gap Assessment

Key Characteristics

Likelihood

Impact

Risk Quotient

WGs/CoC/MAPEX
- **June - Ft Bliss**
- **July – DC Area**
- **Aug – DC Area**
- **Sep – DC Area**
- **Oct – Ft Bliss**

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Selected Steps in Methodology (3 of 3)

- Develop Risk Assessment
- Sort - High / Medium / Low Risks
- High Risk = Capability Needs "Gaps"
- Completed FNA
- Input to FSA

Risk Assessment Criteria

Extremely Low: Need for this capability will occur infrequently (less than 10% of scenarios).

Low: Need for this capability will occur occasionally (up to one-third of the scenarios).

Medium: Need for this capability will occur with some frequency (up to two-thirds of the scenarios).

High: Need for this capability will occur in most scenarios.

Likelihood of Occurrence	Limited	Minor	Moderate	Significant	Catastrophic
High	Low	Medium	Medium	High	High
Medium	Low	Low	Medium	High	High
Low	Low	Low	Medium	Medium	High
Extremely Low	Low	Low	Low	Medium	High

Impact / Consequence on Operations

Low Risk – Acceptable impact to operations in combination with likelihood of occurrence

Medium Risk – Manageable impact to operations with mitigating actions

High Risk – Poses unacceptable risk to mission success or achieving desired force characteristics.

Limited: the absence of this capability/characteristic should have minimal military impact.
Minor: the absence of this capability/characteristic could result in some casualties and some loss of equipment and could impact operational momentum
Moderate: the absence of this capability/characteristic could result in many casualties and destruction of equipment and disruption of operations
Significant: the absence of this capability/characteristic could result in high casualties and greater loss of equipment and could cause major delays in the initiation / continuation of operations
Catastrophic: the absence of this capability/characteristic could result in high casualties and widespread destruction to forces, populations, or infrastructure with major disruption to decisive operations

Risk Assessment Criteria briefed to Joint CoC – Unchallenged